m/021/004

State of Utah

DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY

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July 14, 1993

Mr. Wayne Hedburg, Permit Supervisor
Minerals Regulatory Program
Division of Oil, Gas & Mining
3 Triad Center, Suite 350
355 W. North Temple
Salt Lake City, UT 84140-1203

RE: Amended Reclamation Plan, Hecla Tailings Impoundment M/021/004
Stipulation Agreement No. UGW92-04

Dear Mr. Hedburg:

We received your letter dated May 24, 1993 regarding Hecla's revised plan for capping the Escalante tailings pond near Cedar City, Utah. As you recall, our agency has executed a Consent Agreement with Hecla for ground water monitoring at the site. The minimum period covered by this agreement is twenty years from the date of mine closure in 1990.

While the Consent Agreement did not contain specific design objectives for the cap, it was made on the premise that there would be an effective cap or cover on the pond to effectively exclude precipitation. Therefore, any change to the cap needs to be as effective as the old design. The base of the pond is lined with clay and should the redesigned cap fail to perform as expected, the pond could fill with water and leak high concentrations of cyanide to the ground water.

We agree that the redesigned cap with a capillary fringe has obvious benefits that would improve reclamation efforts and may be less costly to construct. However, an equal objective should be assurances its contents do not become saturated.

Hecla is proposing scenario 1 which they believe is nearly as effective as their old proposal. The "Help Model" indicated flow with scenario 1 was similar to flow with the original clay cap. Page 3 of the document states that according to their "Help Models", scenarios 2 and 3 provide for more evaporation and runoff than scenario 1. Scenarios 2 and 3 have a greater thickness of subsoil.

Sagebrush at the site has a rooting depth of 14 inches and scenario 1 does not provide this depth with a 6 inch subsoil and 6 inch topsoil layer. In our opinion the proposal may meet our objectives if the cap had a 10 to 12 inch capillary barrier, an 8 to 12 inch subsoil layer (rather than 6 inches), and a 6 inch topsoil layer. This modification would provide additional assurance the pond would remain essentially dry. A thicker subsoil and topsoil layer will intercept more precipitation and provide rooting depth to maintain plant growth. Vegetation is needed to prevent erosion and promote evapotranspiration.

Contact Mack Croft at 538-6146 if you have questions.

Best regards,

for Don A. Ostler, P.E.
Director

DAO:MC:gt

cc: Hecla Mining
Wayne Thomas
SW District Health Dept.

P:AMENREC.LTR
FILE:HECLA MINING